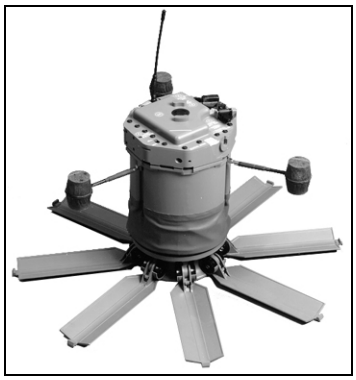
WIDE-AREA MUNITION (WAM) ADVANCED HORNET



The Wide Area Munition (WAM) is a smart, autonomous top-attack anti-tank munition designed to defeat armored combat vehicles from a standoff distance. It utilizes acoustic and seismic sensors in its ground platform to detect, track, and classify potential targets, and then launches an infrared detecting submunition (sublet) over the top of the selected tracked target. Once a sublet detects a target, it fires an explosively formed penetrator (EFP) to defeat it. Threat target vehicles include tanks, engineer breaching vehicles, and lightly armored tracked vehicles. The variant currently in low-rate production is the Hand Emplaced WAM (HE-WAM), also referred to as the Hornet. It is designed to be carried and emplaced by one person, have a 360 degree, standoff lethal radius of 100 meters and be fully autonomous from final arming to target engagement.

A product improvement of the HE-WAM, called Advanced Hornet, will include two types of improvements. First, communications changes will be made, adding two-way communications with status confirmation, a redeploy-before-arm capability, a safe passage mode, and other features designed to allow networking of emplaced munitions. Second, the current HE-WAM sublet will be replaced by an adaptation of one developed for the Air Force Sensor Fuzed Weapon (SFW) P3I program. HE-WAM is substantially different than the SFW P3I warhead. In particular, the HE-WAM has a single EFP made from tantalum. The SFW P3I warhead uses a multiple-fragment EFP of copper. It uses an active laser rangefinder, in addition to a passive infrared sensor. This warhead will expand the WAM target set to include heavy wheeled vehicles.

BACKGROUND INFORMATION

The WAM Required Operational Capability (ROC) approved in March 1990 envisioned a "Family of WAM" concept of three variants: (1) hand-emplaced; (2) Volcano Scatterable Mine System-delivered; and (3) deep attack Army Tactical Missile System delivered. However, only the hand-emplaced variant has been developed. In September 1996, the Army approved HE-WAM for LRIP and Advanced Hornet entered the EMD Phase of its development. Although HE-WAM was expected to go into full-rate production (FRP) at the end of 1998, the Army opted not to proceed into FRP. DOT&E submitted a Live Fire Evaluation report of HE-WAM to Congress in July 1999. The combination of test activities was adequate to support an assessment of the lethality of HE-WAM against its expected targets and draw some inferences regarding the weapons' effectiveness. In March 2001, the Army gave HE-WAM a Conditional Materiel Release for only 377 units. Work continued on development of the Advanced Hornet system with an anticipated full-rate production decision scheduled for 2004.

In FY00, the DoD IG initiated an investigation of the history, progress, and status of the WAM Program. A draft report circulated for review and comment was critical of the management of the program and recommended an OSD-level program review. As a result, Advanced Hornet was placed under OT oversight by DOT&E in May 2001.

An ORD update incorporated newly required interoperability and more specific command and control, reliability, and operational effectiveness capabilities. The ORD was forwarded for approval in September 2001. Specific target dates for MS C and FRP decisions have not yet been established.

TEST & EVALUATION ACTIVITY

No operational testing of Advanced Hornet was accomplished through the end of 2001. DOT&E has been working with the Army to develop an Advanced Hornet T&E strategy and the operationally realistic test events required to support that strategy. DT will continue into 2002 while specific dates for operational testing are being developed.

There was no LFT&E-related testing in FY01. The Live Fire Integrated Product Team (IPT), however, did conclude that another lethality Live Fire program is required for Advanced Hornet due to the warhead change. The Live Fire IPT, with DOT&E participation, has begun work on an LFT&E strategy. A key data source for LFT&E is expected to be a robust set of end-to-end firings against representative threat targets under varying tactical engagement conditions. Because the Advanced Hornet must have the capability to attack heavy wheeled vehicles, those targets will be included in the test program. The Live Fire IPT will determine whether any of the lethality data from the LFT&E program of the SFW P3I, which is also under LFT&E oversight, are applicable to the Advanced Hornet.

TEST & EVALUATION ASSESSMENT

Although HE-WAM entered LRIP in September 1996 it will never enter full-rate production and no additional operational testing is planned. Advanced Hornet remained in EMD throughout 2001, but no operational assessments of Advanced Hornet communications and warhead improvements were made.

Live Fire Testing of the current HE-WAM against actual threat vehicles demonstrated its lethality when critical areas were struck. The damage inflicted by tower shots generally led to substantial degradation in target mobility (and sometimes catastrophic loss). In contrast, end-to-end firings of tactical HE-WAMs against moving T-72 tanks tended to hit areas at the rear and edges of the targets, where there were fewer critical components. Hence, the warhead was less effective. HE-WAM was not effective out to its required range, and was only marginally effective at half the required range. If the full potential of the warhead is to be realized, improvements are needed in sublet accuracy relative to the critical areas of the targets.